CONSTRUCTION AND EVALUATION
OF
FIVE PROGRAMMED UNITS
FOR
EDUCATIONAL PSYCHOLOGY 250
STUDENTS

An Honors Thesis
by
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Approved by:

James G. Hunt
(Advisor)

5-26-71
(Date)
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For Dr. James G. Hunt, Mrs. Linda Annis and My Barbara, without whose help this paper would not have been possible.
STATEMENT OF PURPOSE

This study had two primary focuses. First, the intent was to construct and field-test programmed material to be used as a supplement to a textbook in a university-level course for a period of one testing unit or three weeks. The material utilized the linear form, which is an outgrowth of Skinner's work, and a vertical presentation of material.

The second focus of the study was to test the effect of the programmed units upon the students' understanding of course material in terms of test scores.

It is felt that programmed material has not been utilized as greatly as its success would justify. For example, programmed material could be used to help ease the chronic problem of high student-faculty ratios which are characteristic of Ball State.* By increasing use of programmed material, instructors could be freed from part of the lecturing which is laborious for them and boring for the student. This extra time, which was formerly used for lecture, could be redirected into use for individual attention, in terms of conferences, individual projects and so forth.

A secondary objective of this study, then, is to explore the possibility of effective program construction to be done by relatively "unskilled" persons for actual class use. Further implications of this objective will be discussed later in the

* Undergraduate day classes average 31.37 students per faculty member and the average ratio in the Teacher's College is 42.73 students per instructor, according to TC News in Brief, a publication of the Teacher's College News Bureau.
RELATED RESEARCH

The programmed material constructed for this study had a number of characteristics which need justification. The material was linear, had a vertical format, dealt with major concepts and was intended for use as a supplement to the text. The question of why arises for each of these characteristics.

There are several approaches which can be taken to programming materials, the major ones being linear and branching (Fry, 1963). Fry says, "There is not yet enough research evidence to support one style of programming against the alternatives available, and most program writers simply follow their personal preference in this matter." The preference in this study's case was for the linear approach.

Two possible presentations of the material were considered: a horizontal format, which requires the student to turn the page in order to learn the correct answer; and a vertical format, which allows presentation of the correct answers directly below the frame (Fry, 1963). The vertical format has a number of advantages. It does not require a constant turning of pages and it allows the student to easily review the previous frames (Fry, 1963). In addition, one study shows that 9 out of 10 students prefer the vertical format over the horizontal, a fact which suggests greater acceptance of the vertical format by the students (Fisher and Malpass, 1963).

The programs were aimed at teaching major concepts, as it was felt that specific facts could be generated from these

study.
concepts. In addition, as James McClelland has stated, programs are worthwhile only when they teach principles, not masses of small facts (Garner, 1966).

The use of the programs as a supplement was based on the work done by Goldbeck et al. (1962), who felt there were three factors which would justify this approach: 1) a variety of presentations often stimulates students to think as they study; 2) a certain amount of repetition is desirable, but it is best if this is between methods rather than within them; and 3) since each person has "pet topics" which they like to cover, use of a variety of methods gives the student a broader background.

Next, the notion of what guidelines should be used in programming is of salience. Fry (1963) feels that there are three principles which are relevant to the entire field: 1) use of small bits of information; 2) forcing the student to respond; and 3) informing the student of the correctness of his response. These guidelines, though important, leave many things unsaid. In short, they are too general for the purposes of this program. So it is necessary to find guidelines which contain these ideas but also go on to mention other points.

In their successful program for introductory Psychology, Bell and Hunt (1967) set the following conditions for good programming: 1) small steps between frames; 2) logical sequence of frames; 3) active participation by the student in the learning process; 4) immediate knowledge of results; and frequent review of the material. In addition, for many frames,
they accept an Equivalent Response or ER, which gives the student greater flexibility in constructing the response. The ER also takes the emphasis off of rote memorization and places a greater stress upon learning of concepts.

One last question concerns evaluation of the program. Who is the expert? The current by accepted notion is that the students of the target population are the final authorities on the matter (Fry, 1963). If the students are making too many errors in working through the programs, or do not feel that the program is helpful in understanding the subject matter, then the program must be revised, or at worst, discarded.

**METHOD**

The methodology employed in the study consisted of two parts which can be classified simply as construction and evaluation.

**Construction**—This part of the study was concerned with the construction, field and revision of the programs. The material for the programs was adapted from chapters 4, 6, 8, 9 and 13 of *Human Development in Western Culture* by H. W. Bernard, which is a textbook for Educational Psychology (EDPSY) 250 course at Ball State. The course is also known as Human Growth and Development. One programmed unit was constructed for each chapter of the textbook material.

The basic format of the programs was linear with a vertical presentation, i.e., answers immediately following the frames. The programs follow the guidelines set by Bell and Hunt (1967), which are set forth in the research section of this paper.
The content of an individual unit deals with major concepts from the chapter (selected by the author of this paper) and were stated as instructional objectives a la Nager (1962). Once the objectives were formulated, an outline of the program was prepared. From this skeleton, the actual program was composed.

The construction of the programs employs the Ruleg system. This consists of using a frame which presents a rule or major concept, followed by frames which are illustrations or examples of the rule. Responses were of two types. Multiple choice responses (with two possible choices) were used sparingly, usually in the first (or rule) frame of a sequence. Other multiple choice questions (with four choices) were used in a factual review section at the end of each unit. More predominant were constructed responses, which require the student to write in the correct answer. This type of response, according to Goldbeck et. al. (1962) are more effective in terms of learning of material.

Also included in the programs are frequent review sections and a Review of Factual Information at the end of each unit. These latter mentioned reviews serve to give the student insight into his mastery of the material. (The programs, including instructional objectives and review sections, are found in Appendix A.)

The programs were field tested on freshman psychology students to assess the error rates for individual frames and the programs as a whole. Each frame was evaluated in terms of these rates (which can be found in Appendix A also) and any frame which fell below 80% correct response was revised. The
rates for the five programs are shown below in Table 1.

<table>
<thead>
<tr>
<th>Unit</th>
<th>% correct response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Childhood Development</td>
<td>99.0</td>
</tr>
<tr>
<td>Middle Childhood Development</td>
<td>93.0</td>
</tr>
<tr>
<td>Developmental Influence of Family</td>
<td>98.0</td>
</tr>
<tr>
<td>Developmental Influence of Teaching</td>
<td>94.7</td>
</tr>
<tr>
<td>Intellectual Development</td>
<td>96.0</td>
</tr>
</tbody>
</table>

Table 1. Per cent of frames answered correctly for each programmed unit.

Evaluation-The evaluation of the programs was done in terms of two criteria: the effect upon students' test grades, an objective measure; and students' subjective evaluations of the programs.

Two classes of EDPSY 250 students served as subjects. Both groups had the same instructor and met at 8 AM and 10 AM. The 8 AM group consisted of 32 students and served as the experimental group. The 10 AM group consisted of 37 students and served as the control group.

SAT Verbal scores were selected as an indicator of academic ability. Scores for each student were found from his or her student record. Mean SAT Verbal scores were found for each group (Table 2).

The means were compared by using a t-test for unmatched groups. The t value was .616, and there were 67 degrees of freedom for the two groups. The difference between the groups was adjudged to be insignificant, as the probability
of attaining such a difference by chance alone was greater than .20 \( (t_{.20} = 1.296 \) for 67 degrees of freedom).

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>461.2</td>
</tr>
<tr>
<td>Control</td>
<td>475.0</td>
</tr>
</tbody>
</table>

Table 2. Means of SAT Verbal scores for Experimental and Control groups

The course of instruction was identical for the two groups (reading the textbook and lecture), save for the use of the programmed material by the experimental group.

Prior to presentation of the programs, the students of the experimental group were given the following directions:

- This program has been formulated in order to help you grasp some of the concepts in Chapter 8 (9, etc.), For the best learning results, you should read the chapter and then work the program.

- Take a piece of paper to use as a mask and cover the answers for each question or frame. The answers for almost every frame will be contained in it or in a preceding frame. Write the answer which you feel is best in the blank provided and then remove the mask to reveal the correct answer. An (ER) next to the answer means that anything which is close to the given answer is correct.

- In order to get the best results, you should a) not look ahead to the answer; and b) write the answer out.

Two sets of test scores were obtained from teacher-made tests composed by the class instructor. Test I was a test over material presented in the first four weeks of the quarter prior to the use of programmed units by the experimental group. Test II was a test over material which was covered by the programmed units. Test I was a control situation and Test II was the experimental situation.
Two null hypotheses were developed and tested:

\( H_1: \) There will be no significant difference between the mean test scores on Test II for experimental and control groups (\( \alpha = .05, \text{df}=67 \)).

\( H_2: \) There will be no significant association between the use of programmed material and improvement of test scores (\( \alpha = .05, \text{df}=2 \)).

### RESULTS

The objective research data, the test results, are found below in Table 3.

<table>
<thead>
<tr>
<th>Group</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test I</td>
<td>53.97</td>
<td>57.24</td>
</tr>
<tr>
<td>Test II</td>
<td>52.34</td>
<td>54.24</td>
</tr>
</tbody>
</table>

Table 3. Means of test scores for Test I and Test II for experimental and control groups.

The first null hypothesis states that the experimental group will not do significantly better than the control group on Test II. A cursory glance at the data tells that the difference is negative, not positive as would be necessary to reject the first null hypothesis. Computation of a t-test for unmatched samples bears out this preliminary judgement. The computed \( t = -1.02 \). Since the critical value of \( t = +1.96 \) (\( \alpha = .05, \text{df}=67 \)), the first null hypothesis was rejected and it was concluded that the experimental group did not score significantly higher on Test II.

To test the second null hypothesis, which stated that the use of programmed material and improvement on Test II will not be associated, scores from Test II were compared to scores on
Test I for each student. This was to determine whether the scores on Test II showed positive improvement, no change, or negative improvement from Test I. This data is found in Table 4.

\[
\begin{array}{|c|c|c|}
\hline
\text{Type of improvement} & \text{Experimental} & \text{Control} \\
\hline
\text{positive} & 15 & 7 \\
\text{no change} & - & 6 \\
\text{negative} & 17 & 24 \\
\hline
\end{array}
\]

Table 4. Type of change from Test I to Test II for students of experimental and control groups.

A chi-square was computed for this table and the computed value was 9.85. Since this value exceeds the critical value of \(X^2 = 5.99\) (\(\alpha = .05\), \(df=2\)), the second null hypothesis was rejected and it was concluded that the use of programmed materials and improvement in test score were associated.

To ascertain which direction the association was in, Table 4 was percentaged to produce Table 5, which is below.

\[
\begin{array}{|c|c|c|c|}
\hline
\text{Type of Improvement} & \text{Experimental} & \text{Control} & \% \text{ difference} \\
\hline
\text{pos.} & 46.8 & 18.9 & +27.9 \\
\text{n. c.} & 0.0 & 16.2 & -16.2 \\
\text{neg.} & 53.2 & 64.9 & -11.7 \\
\hline
100.0 & 100.0 & & \\
\hline
\end{array}
\]

Table 5. Percent distribution of type of improvement on Test II for experimental and control groups and percent differences between groups.

The data in Table 5 shows that almost half of the experimental
group (46.8%) improved their test scores after using programmed material, although a t-test for matched groups comparing Test I to Test II for both groups showed Test II to be significantly more difficult ($t=4.65; t_{0.05}=1.96$, df=68). In addition, more than 80% of the students in the control group did not improve on Test II. Also significant is the fact that the number of students who showed improvement using programmed material is over twice as large as the number who improved without it.

The subjective data was compiled from questionnaires which were distributed to the students of the experimental group. A copy of this questionnaire can be found in Appendix B. The questionnaire results were tabulated and put into Tables 6-10.

<table>
<thead>
<tr>
<th>Number of units</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>23</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>29*</td>
</tr>
<tr>
<td>%</td>
<td>79.3</td>
<td>17.2</td>
<td>-</td>
<td>-</td>
<td>3.4</td>
<td>-</td>
<td>100.0</td>
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</tbody>
</table>

Table 6. Response to question, "How many of the programmed units did you work (5 possible)?" by students in the experimental group.

This table shows that all but six of the responding students used all of the programs, and only one did not work at least four of the programmed units.

In looking over Table 7, it is necessary to know why the first interval was set at five or less errors per program (see Table 7 below). Students making five or less errors are, on the

*Only 29 of the students in the experimental group were in class the day the questionnaire was distributed rather than 32.
average, answering correctly 90% of the time or more. This is

<table>
<thead>
<tr>
<th>number of errors</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 or less</td>
<td>28</td>
<td>96.6</td>
</tr>
<tr>
<td>6 to 12</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>more than 1?</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 7. Response to question, "How many errors did you make in working through the program, on the average?" by students in experimental group.

considered by most authorities to be a reasonable level. The table shows that all but one of the students committed five or less errors per programmed unit.

<table>
<thead>
<tr>
<th>yes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>100.0</td>
</tr>
<tr>
<td>no</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 8. Response to question, "Did you feel that there was a logical sequence to the programs?" by students of the experimental group.

Obviously, all of the students felt that the programs had a logical sequence to them.

<table>
<thead>
<tr>
<th>Response</th>
<th>always</th>
<th>usually</th>
<th>sometimes</th>
<th>never</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>8</td>
<td>21</td>
<td>-</td>
<td>-</td>
<td>29</td>
</tr>
<tr>
<td>%</td>
<td>27.6</td>
<td>72.4</td>
<td>-</td>
<td>-</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 9. Response to question, "Did you feel that the steps between the frames were small enough to be understood?" by students in the experimental group.

This table shows that the students felt that on the whole, the bits of information were small enough for them to understand.
Table 10. Response to the question, "Do you feel as though these programs helped you on the test?" by students of the experimental group.

According to this tabled data, over 2/3 of the class felt that the programs did help them on the test.

Sixteen students also added their own comments, which are included in Appendix B. Of these, nine were favorable, three were neutral and four were unfavorable.

**DISCUSSION**

The results showed that the first null hypothesis, which stated that students using the programmed material would not score better than those not using it, was not rejected. Actually, the scores of the experimental group were lower than the control group's score, but as can be seen in Table 3, the experimental group was lower on both tests. Although the difference between the SAT Verbal scores was not significant, it seems likely that there is some factor operating upon the experimental group which is uncontrolled. Since that group meets at 8 AM, it seems very likely that they are less motivated, as 8 AM classes are not renowned for their ebullience. In talking with the instructor of this group, it was found that she felt that the group did lack motivation, which would explain the lower test scores.

The second null hypothesis, which stated that use of programmed material and improvement of test scores were not
associated, was rejected. Further, analysis of the percent distribution of improvement (Table 5) leads to the conclusion that the programmed materials composed in this study were effective in improving the test scores of the students who used them.

The first item of the questionnaire was asked to see if students were actually using the programs and the results in Table 6 show that they were. It was seen that the programs could not help the students if they weren't used, but seemingly the students made good use of them.

The remaining questionnaire items are related to research cited earlier in this study. As Fry has said, the student is the ultimate authority in program evaluation, so the other four items gave the students the opportunity to evaluate the programs in terms of three of the criteria of Bell and Hunt: 1) low error rates; 2) logical sequence; and 3) use of small bits of information. In addition, the last item was an over-all rating of the effectiveness of the programs.

In Table 7, all but one student reported five or less errors per program which fulfills the need for a low error rate. In Table 8, all of the students said that the sequence of the programmed units was logical, which satisfies that criterion. In Table 9, more than a forth of the students reported that they felt that the steps between frames were always understandable, while the rest felt that these steps were usually understandable. Therefore, it would seem that the bits of information were small enough to be comprehended. From the data presented in these three tables, then, it can be concluded that the programs that were constructed for this study fulfilled the criteria of Bell and
Hunt, according to the students.

The final questionaire item asked for an over-all evaluation on the effectiveness of the programmed units by the students. Over two-thirds reported that they felt the programs helped them, which is a substantial vote of confidence.

To summarize the findings, although the programs did not bring about mean scores which were higher than the control groups', they did lead to significant improvement over a prior test. In addition, the opinion of the panel of experts (i.e. students of the experimental group) was that the programs fulfilled the requirements of Bell and Hunt and were, all-in-all, effective in helping them prepare for the test which the programs were geared toward.

In looking back, a major way in which the effectiveness of the programmed units could be improved was discovered. This would entail selecting the objectives of each unit in close cooperation with the instructor of the class. In this study, the programs were composed independently of any knowledge of what the instructor wanted to stress in the course and on the test. This, according to Goldbeck et al. (1962), is not particularly sound, as covering topics both by the instructor and the program will lead to highest test performance, while a lack of match between the two modes of presentation produces lower test performance. This matching could have been obtained if the test and lecture had somehow intermeshed with the programmed units.

Earlier it was stated that a secondary objective of this study was to explore the possibility of a relatively unskilled student to construct effective programs. A conclusion to be
drawn from this study is that this is possible. First, though, consider the training of this author of this study, which consisted of a course in learning theory and instruction from an experienced published programmer in the guidelines of programmed instruction (This is not meant to denigrate the role of this programmer, who was also the advisor of this thesis. He was always available to give helpful suggestions, criticism and encouragement, all of which were necessary and appreciated). One of the basic rules is that practice is the best teacher.

Given these conditions, the role of the upperclass education emerges. In short, what is being proposed is a course in the education curriculum which teach teachers to write programs. In this way, teachers could capably create programs for use by themselves and others. This can be justified as being desirable, as this would lead to a high inter-meshing of content between program and other instructional techniques, which in turn leads to higher test performance, according to Goldbeck. The findings of this study justify the feasibility of such a course.

The use of programmed materials could then be substituted for some lecture, which would free the class to turn to activities which are more interesting and more efficient, both of which lecture is not.

**SUMMARY**

Five programmed units were constructed, field-tested, revised and evaluated, objectively and subjectively. The objective evaluation showed that although the scores of the experimental group did not surpass the control group (thought
to be due to differences in motivation), a significantly
greater number of the experimental group subjects increased their
scores. The subjective data showed that, in the opinion of the
students, the programs fulfilled the criteria set forth by
Bell and Hunt and had overall effectiveness in helping them
on the test. It was concluded that effective programs can be writ-
ten by relatively "unskilled" persons and that a course offering
such a format should be opened to undergraduates.
BIBLIOGRAPHY


Mager, Robert F. *Preparing Instructional Objectives*, Fearon Publishers, Belmont, California, 1962
Appendix A

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EARLY CHILDHOOD DEVELOPMENT

**Instructional Objectives**—Upon completion of this program, you should be able to:

1. define the concept of orderly development of human growth
2. explain the importance of individual growth rate upon childhood development
3. explain the importance of a secure environment
4. define the concept of multiple causation
5. define the concept of accumulative deprivation

**Introduction**

Early childhood is the period from ages 2 to 6. This is a significant period in regard to the development of differences and individuality among children. Although it would be impossible to discuss all of the factors influencing early childhood, some of the more important concepts include: 1) orderly development; 2) individual growth rate; 3) security of environment; 4) security of environment; and 5) accumulation of deprivation.

This program will focus upon the presentation of these concepts.

1. An orderly pattern of development is characteristic of human growth. For example, children learn how to crawl before they learn how to ____________.
   
   walk

2. Further, they are able to stand with help before they stand ____________.
   
   alone

3. Thus, standing with support before standing alone and crawling before walking illustrate the concept of ____________
   
   orderly development

4. Further, as the pattern always involves development from one task to a more difficult task, it can be said that the normal direction of development is (ascending/descending) in complexity.
   
   ascending

5. Thus we would expect a child to roll on his side before he could sit up because ____________.
   
   sitting up is a more complex action than rolling (ER)
6. Review
   A. The fact that a child will crawl before he walks illustrates the concept of ________________.

   orderly development

   B. The direction of development is from the most simple functions to the more ________________.

   complex, complicated (ER)

7. Next, consider individual growth rates. Although children develop in the same sequence, the rate at which they develop differs from one person to another. This concept can be seen when we observe that all children (do/don't) start talking at the same time.

   don't

8. Because of differences in genetic make-up, culture and amount of intellectual stimulation, we can expect that the time of development of a specific capacity will be ________________ for two people.

   different

9. For Example, one child may be toilet-trained at age 18 months while another may not be toilet-trained until age 25 months. This data clearly indicated the (differences/similarities) in the ________________ of children.

   difference/growth rate

10. As was previously stated, one cause of the individual growth rate is due to genetic factors. A child might start walking at approximately the same age his father did due to the influence of his ________________ constitution.

   genetic

11. Another cause of the individual growth rate is cultural factors. A study has shown that the children of a certain African tribe begin to walk to a number of months before American children do. This can be attributed to a difference in ________________ between that tribe and our society.

   culture
12. A last cause is a difference in intellectual stimulation. As you may deduce, research has shown that children in a home with many books learn to read before children in homes without many books. In this case, books are a form of intellectual stimulation.

13. Given the concept of individual growth rate, it (would/wouldn't) be wise to consider a child dull if he is slightly behind his brother's rate of development.

wouldn't

14. It further follows that any judgment of a child's development based solely on comparisons with other children is likely to be invalid (ER).

15. It is more valid to look at a child as one of a kind. In light of this and our discussion of individual growth rates, it is probably best to treat each child as a/an individual, unique, different (ER) person rather than as a stereotyped human being.

16. Review

A. Two children learning to pronounce the word "flower" at different ages illustrates the concept of individual growth rate (ER).

B. A child learning to walk at the same approximate age as his father did illustrates the influence of genetic factors.

C. Children in Indiana and Africa might start walking at different ages due to differences in culture, cultural factors (ER).

D. Two children with different numbers of books in their homes might read at different ages due to a difference in amount of intellectual stimulation.
E. Rather than considering each child as the same type, it would probably be best to treat each child as an ________ unique, individual (ER)

17. In this section, we will devote our efforts to the needs of a developing child. One need is a secure environment. A reason that a child needs this is that if he feels threatened, he will devote all of his energy to eliminating the ____________ threat

* _____________________________
<table>
<thead>
<tr>
<th>Maslow's Hierarchy of Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-actualization</td>
</tr>
<tr>
<td>Esteem- feelings of worthiness</td>
</tr>
<tr>
<td>Love-relationships, to love and be loved</td>
</tr>
<tr>
<td>Safety needs</td>
</tr>
<tr>
<td>Physical needs-thirst, hunger, sex, etc.</td>
</tr>
</tbody>
</table>

18. Above is a diagram of Maslow's hierarchy of needs. Maslow feels that the lower needs must be satisfied before the person can turn his energies to a higher need. This implies that a person will neglect his own safety if he is ________._

* hungry, thirsty (ER)

19. Further, a child might not develop the inter-personal relationships he needs for further development if his safety needs are _________.

* threatened, not met (ER)

20. Thus, we can see that if a child is to develop to his maximum level, he must have a ________ environment, according to _________.

* secure/Maslow
21. One aspect of a secure environment is the physical needs. The child must be free from hunger, thirst, cold, sickness and so on, or his environment will not be ________________.

secure

22. Further, if the child is hungry, he will not develop socially because his energy will be devoted to ________________.

satisfying his hunger and thirst needs (ER)

23. Thus we can see that a child's social self will not develop if his ________________ needs are not met.

physical (ER)

24. Another component of a secure environment is the love and acceptance of the parents. A child who does not feel loved by his ________________ will probably devote his efforts toward ________________.

parents/gaining the love and acceptance of his parents (ER)

25. Further, if a child is not loved, he will not accept himself for what he is, because he feels that his parents don't accept him. Because the self-concept is based on what a child thinks about himself, a child who lacks the love and acceptance of his parents will most likely develop a (positive/negative) self-concept.

negative

26. In addition, Bernard has pointed out that in order for a child to develop a feeling of independence, it is better for him to be loved and accepted, rather than his parents trying to teach him independence. As a result, a child who is loved and accepted is more likely to act______________ than a child who is not ________________.

independently/loved and accepted

27. Review
   A. Aspects of a child's development will be hampered if he feels ________________.

   threatened, insecure (ER)
B. To eliminate the feeling of threat and help their child develop to his highest potential, the parents should provide a secure environment.

C. Two parts of a secure environment are providing for the child's physical needs/love and acceptance and assuring him that his parents do him.

D. The development of a healthy self-concept and feelings of independence are facilitated by feelings of love and acceptance by the parents for the child.

28. Next, reference is made to some of the attitudes which make the development of an atmosphere of love and acceptance difficult. One of these is that parents expect too much of the child too early an age. A parent who does not know of the concept of individual growth rate might expect his child to walk before he is able, ready (ER).

29. This child might not feel he had gained the love and acceptance of his parents because he had not fulfilled their expectations. Therefore, he would feel as though his environment were not secure.

30. Thus, we can see that the child who is expected to walk before he is able to may not feel loved and accepted because his parents had expected too much at too early an age (ER).

31. Another attitude which does not lead to feelings of love and acceptance is a lack of patience. This is somewhat related to the previous attitude mentioned. If a child's first efforts at walking are not immediately sucessful, the parents should aid the child by giving him all the time he needs. That is, they should be patient and try to help the child.
32. If the parent is not patient with the child, then he will feel pressured to walk in order to retain the love and acceptance of his parents to maintain a secure environment.

33. So for optimal level of functioning, the parents should be patient with the child.

34. Finally, if the parents are reluctant to let the child outgrow his childish dependence upon them, he will not feel loved and accepted. Again, it is important for the parents to be patient with the child and let him develop at his own rate (ER).

35. This, of course, follows from what was previously said about the development of independence being best aided by rather than teaching love and acceptance.

36. Review
   A. If the parents expect too much of a child at too early an age, he is not likely to feel loved and accepted.

   B. If a child is to develop fully, his parents should be patient with him and allow him to develop at his own rate.

   C. Three attitudes which do not lead to an atmosphere of love and affection are 1) expecting too much at too early an age, 2) lack of patience, 3) reluctance to allow the child to outgrow his dependence on parents (either order, ER)
37. Next, let us consider the concept of multiple causation. This concept states that no occurrence is the result of only one cause, but is the result of many causes. So, though we can say that lack of love and affection is a major cause of over-dependence, it is not the ____________ cause.

only (ER)

38. So whenever we speak of one activity causing another, we have to remember it is not a strict one-to-one correspondence due to the concept of ________________

multiple causation

39. Finally, consider the idea of accumulative deprivation. This is somewhat like building a house. If the foundation is not properly laid, then the first floor has a good chance to collapse, with the second floor having an even greater chance. In reading, if the child does not master the fundamentals, he reads first-grade materials poorly and it is even worse for _________ grade.

second

40. In short, his deprivation in reading skill snowballs, or accumulates as he ____________ in school.

progreses, goes on (ER)

41. Thus, if a child’s developmental problems snowball due to early deprivation, this is probably due to the operation of ____________

accumulative deprivation

42. Review
   A. The idea that nothing is the result of only one cause, but of many causes, illustrates the concept of ____________

   multiple causation

   B. The idea that problems due to early deprivation will snowball illustrates ________________

   accumulative deprivation

Material for this program is adapted from Human Development in Western Culture, by H. W. Bernard, Third Edition, Allyn and Bacon, 1970.
QUESTIONS OF FACTUAL RECALL

1. The early childhood years last from
   A. 1 to 7 years of age
   B. 2 to 6 years of age
   C. 3 to 6 years of age
   D. 3 to 7 years of age

2. In terms of rate and sequence of growth, all children grow
   A. at the same rate but in a different sequence
   B. at the same rate and in the same sequence
   C. at a different rate but in the same sequence
   D. at a different rate and in a different sequence

3. If two children are both 11 months old and child A is walking while child B isn't, B's parents should
   A. warn A's parents that he is abnormal
   B. consider B to be retarded and institutionalize him
   C. take B to the doctor so they can find out what is wrong
   D. be patient with B and maintain a secure environment for him

4. A secure environment has which of the following components
   A. satisfaction of hunger
   B. love and affection
   C. satisfaction of thirst
   D. all of the above

5. Which of the following attitudes leads to an atmosphere of love and acceptance?
   A. lack of patience
   B. expecting too much of the child at too early an age
   C. plenty of time for the child to develop
   D. helping the child to grow at a very fast rate

6. Which of the factors below does not influence a child's rate of development?
   A. differences in weight of cerebellum
   B. differences in culture
   C. differences in intellectual stimulation
   D. differences in genes

7. One method of developing independent behavior in a child is to
   A. make the child act independently
   B. teach him the proper ways of acting independently
   C. create an atmosphere of love and acceptance
   D. do not help him, so he has to act independently

8. A poor self-concept results from
   A. total lack of patience by the parents
   B. entirely due to unloving parents
   C. completely caused by lack of security
   D. probably due to each of the above reasons
9. Which would we expect a child to do first?
   A. walk alone
   B. walk with some support
   C. sit with help
   D. sit with no help

10. Which of the following needs would a person most likely satisfy first?
    A. need for achievement
    B. need for protection
    C. need for food and drink
    D. need for social approval

Answers
1. B  6. A
2. C  7. C
3. D  8. D
4. D  9. C
5. C  10. C
Level 1

15. Next, turn to the development of the self-concept. He defines the self-concept as the attitudes and feelings...
12. In order to maintain a positive self-concept, a person will be the ________ type.

13. A person who ________ type is more likely to maintain a ________ self-concept.

14. The child is a ________ self-concept, which indicates a ________ control of behavior.

15. A child does what he ought to because of ________ control.